

EDUCATION-COMMUNICATIONS EVENT REPORT AND RECOMMENDATIONS

Purpose of Travel:

13th Annual Texas State GIS
Forum and Training
Conference

Attendee's Name:

Joseph J. Kerski, Geographer
Denver

Location:

Austin TX

Web Site:

<http://www.tnris.state.tx.us>

USGS Attendees:

Barb Ryan – Reston
Jean Parcher - Austin
Bill Flynn - Austin
Brook Kintz - Austin
Frank Heitmuller - Austin
Joseph Kerski – Denver
Brenda Jones – Sioux Falls
Roger Oleson – Sioux Falls

Trip Date(s):

4-7 February 2003

Purpose of Event:

GIS Conference, State of Texas

My Activities at Conference:

- (1) Give keynote address at education day of the conference.
- (2) Conduct presentation on “How to download, format, and use USGS spatial data, with an emphasis on Texas”, with Jean Parcher.
- (3) Help operate USGS exhibit in exhibit hall.
- (4) Meet with Mike Parcher on the GIS

education program in Texas.

(5) Meet with Ashok Wadwani on the GITA K-12 GIS initiative, and with Bob Gray (UTEP) about future work we might do to build on our 2001/2 GIS workshops.

Other USGS presentations at Conference:

Barb Ryan: The National Map

Jean Parcher: Brownsville/Matamoros Flood Hazard Project and Colonias Infrastructure Planning.

Brook Kintz: Data Integration and Development of the National Land Cover Database 2000 for the Central Texas Region.

Brenda Jones: Getting Satellite Data for Emergency Response, and “Emergency Responders—Needs and Wants.”

Roger Oleson—Introduction to Sensors Onboard NASA's Earth Observing -1 Mission (EO-1)



Over 250 people attended this year's GIS forum. Participants represented GIS consultants, data providers, researchers, graduate students, and educators from government, nonprofit, private enterprise, and academia.



Joseph Kerski, Frank Heitmuller, Brook Kintz help staff the USGS exhibit.

Department of the Interior Highlight

USGS scientists will conduct workshops and host an information exhibit for the Texas geospatial user community during the 13th Annual Geographic Information Systems (GIS) forum and training conference, 3-6 February 2003, at the University of Texas in Austin.

Associate Director for Geography Barbara Ryan will discuss a partnership between the USGS and federal, state, and local government agencies to update data for a seamless, nationwide national map. Brenda Jones and Ron Risty will train data users in the products that the USGS can provide to organizations in support of Homeland Security and natural disaster response.

Jean Parcher will discuss a partnership effort to develop data for modeling flood hazards along the US-Mexico border. Joseph Kerski will illustrate how to find and use USGS digital map data, and will serve on a panel to discuss the implementation and effectiveness of mapping technologies in education.

This annual GIS Forum and Training Conference is sponsored by the Texas

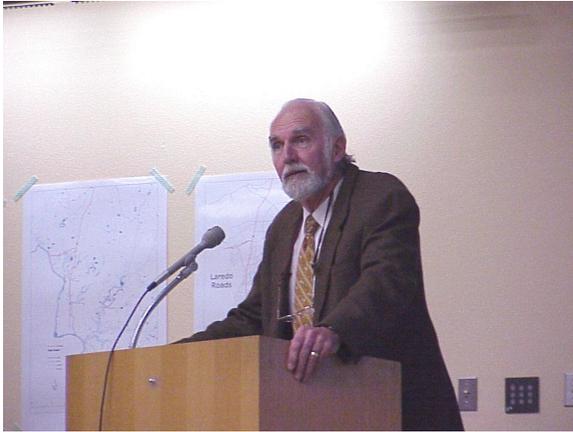
Natural Resources Information System and the Texas Water Development Board, in coordination with the Department of Information Resources and the Texas Geographic Information Council to bring geospatial data users together from all over the state (Joseph Kerski, Denver, CO, 303-202-4315).

Conference Overview



The annual GIS forum and training conference was held at the University of Texas' JJ Pickle Research Center in Austin.

The conference was sponsored by TNRIS, the Texas Natural Resources Information System. TNRIS serves as the principal state archive for natural resources data and celebrated their 30th anniversary at last year's conference. TNRIS is part of the Texas Water Development Board and receives guidance from the Texas Geographic Information Council (TGIC), which is comprised of state agencies and universities.



Charles Palmer of TNRIS addresses the conference attendees.

TNRIS includes four sections: Information Services, Research and Distribution Center, the Texas-Mexico Borderlands Information Center, and the Texas Strategic Mapping Program (StratMap). StratMap's main function is to create data for public distribution. Funded in 1997, it manages the production of DOQs, DEMs, DLGs for hypsography, hydrography, soils, transportation, and boundaries.

Barb Ryan's session was followed up in the afternoon by Drew Decker and others discussing The National Map's implementation in Texas. In my mind, this is exactly what needs to happen for The National Map to be successful—organizations talking about how to implement it and form partnerships at the state and local level.



Brenda Jones of USGS EDC explains how to access satellite imagery for emergency response.



Barb Ryan, USGS Associate Director for Geography, speaks about the importance and relevance of The National Map and the USGS in the mapping and GIS community, and to society at large.



Attendees at Brenda Jones' presentation at the Texas GIS conference.



It was a pleasure to meet the INEGI staff at the conference. (L-to-R): Jose Ornelas, Jean Parcher, Carmen Lopez, Rafael Allende.



Joseph Kerski with one of the magnificent satellite images of Texas. These are plotted on linen material and displayed throughout the main speakers room.



Marcy Berbrick and others from TNRIS read the winning names from the poster contest, sing a song to Hugh Bender of the Texas Geographic Society, and help foster the GIS community spirit.



Photograph showing the size of the satellite images plotted by TNRIS.

Poster Session

The conference staff organized the best poster session to date. The USGS hosted several posters in the poster session, including some of those indicated below.



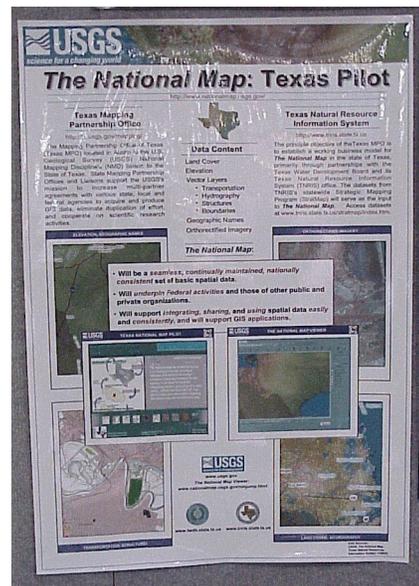
Dave Hester's poster explaining studies in the Edwards-Trinity Aquifer region of Texas.



Jean Pacher's poster on her Matamoros / Brownsville Flood Hazard Mapping project.



My poster explaining the how's and why's of partnerships in GIS education, featuring some of our partnership efforts over the past year.



The National Map Texas poster created by Brook Kintz, geographer at the USGS Austin office.



One of the numerous high-resolution Landsat images printed on canvas by TNRIS on display at the conference. These really were impressive!

Other Conference Sessions

The following session tracks were held at the conference: Imagery Issues, Data Models, DOQQs, Economic Development, The National Map, Texas-Mexico borderlands issues, Finding and Using Data, Landcover, and Education.

Space Shuttle Columbia

One of the things about this conference that will probably stand out in the minds of each attendee was Dr Gordon Wells' presentation on mapping the debris from the space shuttle Columbia. It had crashed a few days before the conference, and Dr Wells, as well as David Roach from the USGS, and many others were involved with

mapping the entire region and working closely with NASA, state and local government, and field volunteers. Dr Wells changed his entire keynote to reflect on the work he had been doing, just about around the clock for the past several days with very little sleep, concerning the disaster.

The subject matter was sobering, and yet it was heartening to note that this field that we're all involved in is critically needed for daily decision making, even in times of disaster and tragedy. Noteworthy too was the fact that data partnerships were already in place before the disaster struck, so that the data could be quickly assembled and given to the decision makers. This is a good lesson for all of us—work on those partnerships--you never know when you need to rely on them in a critical hour of need. I could not help but think that had the disaster occurred in a state without a network of partnerships and an organization such as TNRIS, things might not have gone so smoothly. Article below.

GPS/GIS mapping helps narrow search for shuttle debris.

By Bob Brewin
FEBRUARY 05, 2003

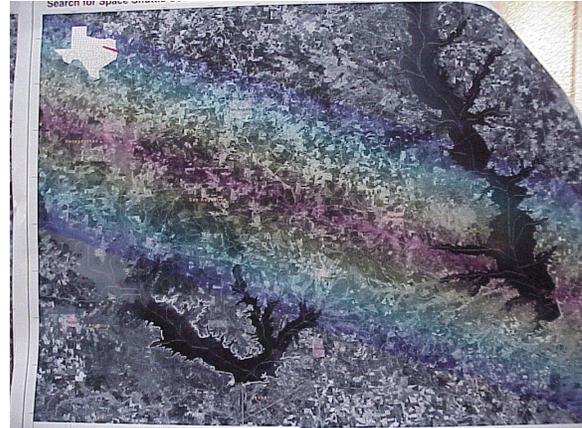
Using Global Positioning System-derived location data to define the debris field from the breakup of the shuttle Columbia, researchers and undergraduates from Stephen F. Austin University in Nacogdoches, Texas, have helped narrow search patterns in East Texas, where thousands of pieces of the spacecraft have been located.

Darrel McDonald, director of the Humanities Undergraduate Environmental Sciences (HUES) geographic information system (GIS) program at the

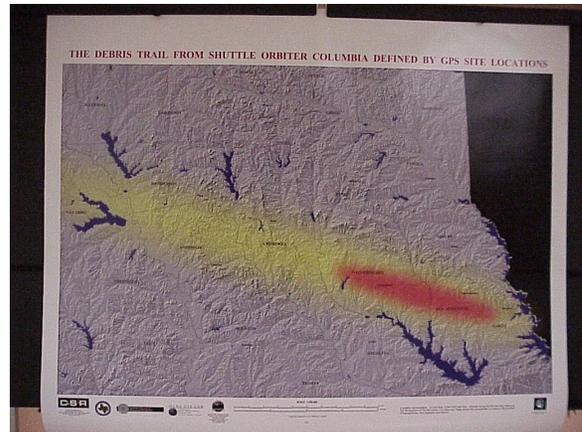
school, said the data from the nearly 1,000 pieces of shuttle debris already located has helped emergency workers better focus on the areas they need to search along the vehicle's debris path.

The shuttle debris data collection effort -- staffed by teams from both the HUES GIS program and the university's Forest Resources Institute -- has helped produce digital maps that provide a retrogressive pattern of debris, McDonald said. "This has improved the search effort, but has not totally solved the problem" of finding debris that could explain what happened to the Columbia upon re-entry Saturday morning, he said.

More on the website at: <http://www.computerworld.com/mobiletopics/mobile/story/0,10801,78222,00.html>



Satellite image showing the space shuttle Columbia's debris.



Map showing counties where the space shuttle Columbia's debris had been found, as of five days after the disaster.



Map showing counties where the space shuttle Columbia's debris had been found, as of five days after the disaster.

An interesting lunchtime session included presentations on archaeology and GIS, such as mapping historic battle sites.

I must commend the folks at TNRIS in the strongest way possible. I think that anyone who works with spatial data and GIS will understand this. Studies since the 1980s have bemoaned the fact that oftentimes, 80% of the total time spent on GIS-based projects is taken by obtaining, formatting, and downloading spatial data. TNRIS makes it possible to cut quickly to the analysis, which is what we want to be doing

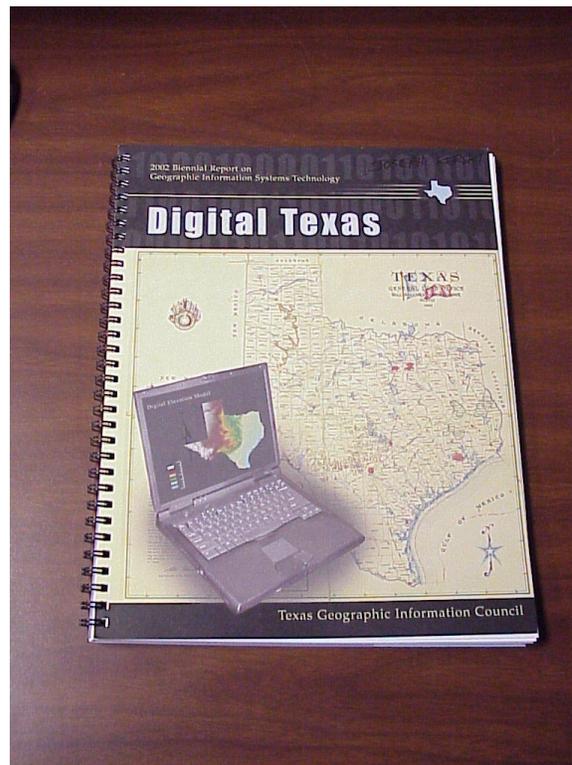
with GIS in the first place! If every state had a TNRIS equivalent, the data users would gain by having accessible, easy-to-use data sets at their fingertips. Ultimately, the society would gain from the increased use and application of spatial data in science, engineering, and education. Fortunately, several states do have a parallel organization to TNRIS, and one only needs to compare the extent of GIS use in states with and without these organizations to understand that these agencies make a big difference in terms of data use and application in their states. As Mike Parcher and others state, *“The value of the geospatial data increases when more people use it.”*

Not only are the TNRIS data holdings and production impressive, but also the entire TNRIS organization--their political structure and the amazing progress they have made in their 31 years of existence, the way *they strive to make the data sets accessible and usable to the data users*, and their overall enthusiasm and good-naturedness. The TNRIS staff makes not only the conference an enjoyable one, but it is a pleasure to work with them throughout the year. For example, they provided me with some much-needed data and imagery for a GIS workshop I conducted at UTEP in September 2001. They really do go the extra mile. They have excellent working relationships with other excellent organizations such as the University of Texas Center for Space Research. If one were to think of the best characteristics of an organization that the USGS could partner with, I believe that TNRIS would meet all of those criteria.

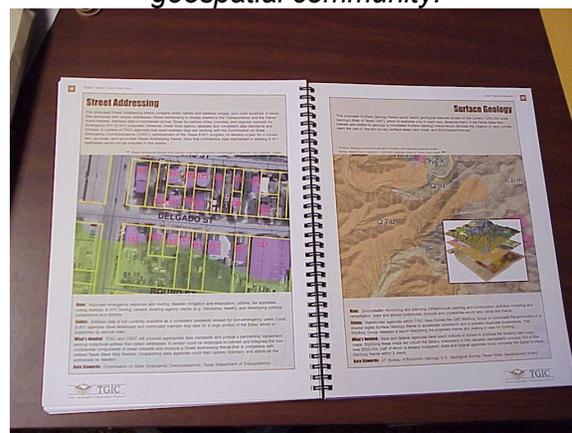
Exhibit and Materials

TNRIS and the Texas Geographic Information Council put together an

impressive book called “Digital Texas” for the attendees.



Digital Texas featured partnerships, data, and programs of interest to the Texas geospatial community.



The Digital Texas book featured partnerships, data, and programs of interest to the Texas geospatial community.

In the USGS exhibit, we featured new data and technology in research and Geographic Information Sciences. Our emphases were The National Map, the Trinity-Edwards aquifer project, the Brownsville-Matamoros flood mapping project, and partnerships.

The most popular item at our exhibit: I brought over 150 surplus USA watersheds and Grand Canyon topographic maps, as well as several Texas topographic maps and Tapestry in Time USA maps. These were all distributed in less than 2 hours, illustrating the universal attraction of distributing maps at a conference exhibit.

We featured a variety of websites, including the Texas Mapping Partnership Office (<http://tx.usgs.gov/mapping>), USGS Biological Resources Division Texas Cooperative Ecosystem Study Unit (<http://apollo1.tcru.ttu.edu>), USGS Texas Activities (<http://txwww.cr.usgs.gov>), The Edwards Aquifer High Resolution Land Cover data (http://www.tnrcc.state.tx.us/gis/metadata/dw_lulc_met.html).

HUD-USGS Colonias Monitoring Project: http://rockys20.cr.usgs.gov/maverick_colonias/initialpg.html

Some of the other materials we distributed included:

The Edwards-Trinity Aquifer Studies information sheet, the newly revised GIS poster, Austin TX topographic maps, Educational Materials from the USGS, Estimated Use of Water in USA circular, GeoMac - Wildfire fact sheet, Ground Water and Surface Water circular, High Resolution Land Cover fact sheet, How to Get Info from USGS info sheets, How To Download and Use USGS Spatial Data for ArcGIS, GIS in Education partnerships newsletter, the

Implementation and Effectiveness of GIS in Education, Map Projections posters, NHD fact sheet, NED fact sheet, the National Land Cover Dataset fact sheet, The National Map fact sheet, the Quality of Our Nation's Waters circular, Texas Topographic Map Indexes, the Texas State Fact Sheet, USGS GeoData general interest publication, information on the HUD Colonias project, the US-Mexico transboundary project information, and the USGS WWW fact sheet.

We set up the exhibit on Monday afternoon, and operated the exhibit on Tuesday and Wednesday. My only recommendation for the improvement of the exhibit is to have the exhibits open for the education day participants.

Other exhibitors included Emerge Digital Imagery, Digital Globe, ESRI, The Texas Bureau of Economic Geology, Vidar, VarGIS, GeoWarehouse, Applied Field Data Systems, Trimble, and approximately 20 others.

Audience

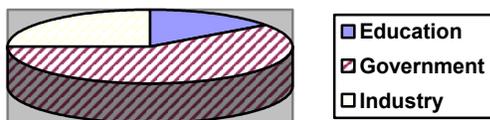
The audience at this conference is predominantly GIS data users from industry, nonprofit organizations, federal, and state agencies, as well as university professors, university researchers, and K12 teachers.

The USGS has participated in this event many times since the inception of the conference in 1990. We have had an exhibit at the conference for the past 4 years. I have participated in the conference for 3 years and look forward to returning.

We had excellent personnel at the exhibit. The personnel required at this conference need to have experience working with the public, and have knowledge about

applications of GIS using USGS products, USGS research in Texas and as applied to spatial data, USGS products and services with emphasis on GIS, geologic data, hydrologic data, satellite images, digital imagery and cartographic data, The National Map, cooperative agreements between the USGS and state, private, federal, and international partners (such as INEGI) and the Texas Stratmap program, TOP program, and other projects involving the state and the USGS.

Education Focus Area



Importance of Texas GIS Forum

As I have stated in the past, the Texas GIS forum is extremely worthwhile for several reasons. First, it sponsored by an organization that we work extensively with--TNRIS. We have similar goals and commitment to spatial data, research, and education, specifically GIS and remote sensing.

Second, the conference not only provides us an opportunity to share with others what our organization can offer, but we can use the conference to further our partnerships with TNRIS and others in the state, region, and internationally through the US-Mexico transboundary initiatives.

Third, the conference provides us a means to work on GIS in education initiatives and partnerships. An excellent example of a

partnership in my own work that arose as a direct result of the Texas GIS Forum is a USGS-NCAR (National Center for Atmospheric Research) partnership. Thanks to a contact made at the 2002 Forum through Dr Gordon Wells at the Center for Space Research (and who work closely with TNRIS as well), I have been working with NCAR staff in Boulder, Colorado. I conducted a GIS presentation there in Spring 2002 and began work in 2003 with their staff on an educational GIS project in Brownsville-Matamoros that will help educators and students understand the relationships between climate and watersheds in their own local area through GIS tools and methods.

Education Day

Mike Parcher of TNRIS has taken a lead role in geospatial education in Texas. I saw him several weeks ago at the GeoTech conference in Dallas and marvel at how many teachers I work with know of Mike, his efforts, and TNRIS resources for their K-12, community college, and university classrooms.

Mike organized an Education Day during the conference that included key educational leaders (for example, from the Texas Education Association) that fostered many discussions about how best to proceed with university-K12-state-federal-regional educational partnership endeavors.



Mike Parcher speaks with a teacher on education day. I commend TNRIS and Mike for being such strong supporters of education and consider them to be models for other state geospatial-related agencies.

I spoke at the conference about the reasons for using GIS in education, challenges, and recommendations. We spoke extensively during the morning about the importance of educational partnerships and sustainability.

I had excellent conversations with Lisa Sweeney from Rice University, two professors from Baylor University, Judy Kelley from the Rural Systemic Initiatives in Texas, and others during Education Day.



Teachers at the Education Day, 6 February.

There's No Place Like Texas!

I truly believe that after conducting GIS workshops around the USA and around the world, that Texas is the best place to work with GIS. Given the support that TNRIS gives to education, the availability of spatial data in Texas, and strong geography and education departments at UT, A&M, Southwest Texas State University, UNT, and many community colleges, it is not surprising that many educators in the state are using GIS, from middle school to university level. I have conducted GIS workshops in College Station, in Dallas, in El Paso, and in Houston over the years. I expect the interest to gain momentum and plan to continue to work with TNRIS in this regard.

After my presentation, Dr Barbara Parmenter of UT, and Mary Burns, South Central Regional Technology in Education Consortium, spoke about GIS education. Craig Eissler from GeoTech Visual Power and the Orton Foundation discussed the Community Mapping Project and GIS in education. I have conducted several workshops with the Orton Foundation in the past, including two days in 2000 and one week in 2001 in Colorado, and several workshops at the GeoTech conference in Dallas and the ESRI Education User conference throughout the years. The Orton Foundation was founded in 1995; its goal is to empower rural communities with resources to enable them to make wise land use decisions. The community mapping program (www.communitymap.org) seeks to link educators with community decision makers, promotes real-world projects for students to learn about their own communities, and provides a method for students to give results back to their community (through their research). Orton's goals overlap the USGS' in many areas and

it is an excellent organization for the USGS to be involved with.

Ken Russell discussed GIS education initiatives at the secondary and community college level in Houston.

Several teachers were so excited about GIS in education that Mike Parcher and I worked with them for several hours after the conference ended!



Mike Parcher, TNRIS, and Joseph Kerski, USGS, discuss GIS in education initiatives and partnerships.

Comments and Recommendations:

As I hope is clear from this report, the importance of USGS activities and partnerships in Texas cannot be overstated. I consider them to be the model for other states and regions. Over the years, we have been involved in The National Map program here, the Texas Stratmap program, US-Mexico Transboundary program, the Texas Orthophoto Program (TOP).

I am pleased that the USGS plays a major role in this conference. We absolutely need to continue doing so. Our relationship with TNRIS and with the other organizations here is long-standing and needs to continue to grow.

I've been attending GIS conferences since approximately 1985, and it is gratifying to see more and more intersection between education and GI science. The Texas GIS Forum was a great example of the convergence of these trends. More organizations are viewing education as not something they "do on the side," but as an integral part of their operations, aligned with their goals. Pursuing education-related projects can help them meet their overall goals as well as lead to further partnerships with traditional and new partners.

I was also pleased to see much USGS presence on the conference program. The reason for conducting workshops at the conference is to add value to our presence above and beyond our exhibit.

The traffic at the exhibit is, as is the case during many of the conferences we attend, is lighter during presentations than during break times. By conducting presentations, we have the opportunity of working one-on-one with the attendees. We have the opportunity of obtaining their feedback on programs such as the National Map. We work with data users to demonstrate **how** our products and spatial data in general can be used in their fields of study. It does more than tell folks **what** products are available, but how they can be used. This is especially critical in the sometimes confusing array of software tools, data types, and downloading/formatting instructions.

At all GIS conferences, education is becoming more of a central issue. This conference included, as it did in 2001 and 2002, an educational track that included my presentation. This has expanded into an "Education Day." GIS and remote sensing in education is one excellent avenue for the

USGS to form partnerships with academia, industry, and government.

Despite the fact that each Texas GIS Forum is larger than the one before, I still believe that this conference could benefit from even greater exposure and publicity. The event could perhaps be publicized earlier and to a greater extent at local colleges (such as Austin Community College) and universities (University of Texas, Southwest Texas State University, Texas A&M, Texas Tech). There is no reason why this conference could not hold 500 or more attendees. The facilities could hold that number. Numbers aren't everything, however, and there is a high degree of camaraderie at this medium-sized conference. Many people know each other at this conference and are comfortable working together. Aw, shucks!

Technical Notes

The ArcHydro data geodatabase model can be accessed through: <http://www.cwrw.utexas.edu/giswr/hydro/index.html>

The weather imagery Frank Bell's weather imagery can be accessed through: <http://www.srh.noaa.gov/wgrfc>

Texas Geographic Society
<http://txgs.org>

Satellite Image Archive:
<http://glovis.usgs.gov>

Acknowledgements

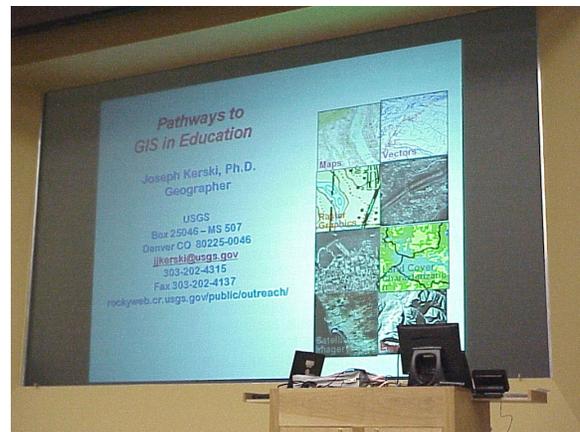
I would especially like to thank Dave Hester, Geographer at USGS Rocky Mountain Mapping Center, for his assistance in pulling together fact sheets, posters, digital data, and presentations that highlight the excellent research and development that he

and others here are working on in Texas. Dave went above and beyond the call of duty for many weeks before the conference so that we could highlight our latest work in the state.

I would like to thank Jean Parcher, Brook Kintz, Bill Flynn, and Frank Heitmuller for their numerous hours of preparation with the conference and our exhibit there. It is in large part because of their presence in Texas that the USGS has enjoyed a growing relationship with governmental organizations, private industry, and academia throughout the state.

I also thank Craig Skalet and Jack Fordham for supporting my travel to this event, particularly in these stringent economic times.

I thank the TNRIS staff for providing the USGS exhibit with such an excellent location once again. The exhibit booth at a conference such as this, where most of the audience knows us well, serves as a reminder to our role in geospatial data production, research, and partnerships, and provides a meeting place to network with the conference participants.



I present at approximately 45 conferences and facilities annually, and I must say that it is difficult to beat the facilities at the UT

Pickle Research Center. We all had a 30-foot screen, Internet access, a wireless microphone, an excellent sound system, and theatre-style seating for our presentations. At one point, I zoomed in on the conference building with teraserver, ran my presentation, and had a 3D model of population growth in ArcGIS all running simultaneously. That is just not possible at most venues.

The conference facilities are excellent here and I recommended to the research center facility staff that it never be moved to a hotel, where the costs are higher but the facilities are not as optimal. Here, the Internet connection always works well and is a T-1 high speed line, which is becoming essential for the display of ArcIMS sites to download and use geospatial information. I thank Molly Anderson and others there for their helpfulness each year at this event. They are truly top-notch.



My other computer is a Cray! Cray Computers in the research center where the conference is held.

*** End of 2003 Texas GIS Forum
Conference Report ***